

Attorney Docket No. ESST-02701

Remarks:

Reconsideration of the claims as amended are respectfully requested. Claims 1-3 are pending in the application. Claims 1-3 stand rejected. And claims 1-3 have been amended. New claims 4-15 have been added. Support is found in the application as filed, and no new matter has been added.

Claims 1-3 stand rejected under 35 USC 102 over U.S. Patent No. 5,703,588 of Rivoir et al., ("Rivoir"). Rivoir, among other details, discloses a segmented digital to analog converter having two stages of resistor strings. In contrast, the invention as now claimed as this amendment includes a third and possibly subsequent strings of resistors. This limitation is not disclosed in Rivoir, and is novel. In practice, circuits employing this new third string of resistors greatly improves performance by substantially removing systematic error generated in the operation of the circuit.

In response to the examiners rejections and remarks, applicant has amended claims 1-3. This is intended as a significant attempt to move the prosecution of this application forward to allowance.

The amended Claim 1 includes an added limitation of a "a third segmented series of resistors having a set of resistors from along which an output can be generated". Claim 2 further clarifies this limitation as follows:

A segmented digital to analog converter according to Claim 1, wherein current is transmitted between the first and second current source in a manner that substantially removes error in the transmission of the second set of digital bits, and wherein an output signal is generated along the third segmented series of resistors at a point along the series of resistors.

Amended Claim similarly clarifies the limitation as follows:

A segmented digital to analog converter according to Claim 1, wherein current is transmitted between the first and second current source in a manner that substantially removes error in the transmission of the second set of digital bits without creating a disturbance in the circuit as a whole, and wherein an output signal is generated along the third segmented series of resistors at a point along the series of resistors.

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In support, as stated in the application, Page 5, beginning at line 22, an additional set of resistors is included in the circuit to substantially reduce systematic error resulting from operation.

However, in the improved circuit illustrated in Figure 2, and according to the invention, the devices 214 and 216 each form part of a cascoded current source providing this current. Hence no current needs to flow out of the first set of resistors. Hence there is no disturbance. This is the principle and may be repeated again for a third set of resistors and can be repeated for successive sets of resistors (not shown). In this circuit there is substantially no systematic error resulting from operation. Given that the currents are accurate, the error is substantially zero and independent of the resistance of the switches in the "on" or closed position used to connect the second set of segmented elements to the first set of segmented elements. This is also true for a second set connected to the third set, and other successive sets that may be connection in other circuits.

Furthermore, new claims 4-15 have been added to further clarify these features of the invention. Support is found in the application as filed, and in particular in the excerpt cited above. Claim 4, for example, includes the limitation "a third segment having a third segmented series of resistors including a third set of resistors connected end to end from along which an output can be generated at any point between the resistors." Claims 5-11 depend on Claim 4, and also each include further clarification of the additional segments of resistors. Claim 12 reads:

A segmented digital to analog converter, comprising:

at least three segments that each have an individual plurality of resistors and configured as a set to receive and convert one set of digital bits of a digital input signal to an analog signal;

wherein each segment is connected to one set of cascoded current sources that provide current to one end of each series of resistors, and is connected at another end to another set of cascoded current sources to provide current to another end of each series of resistors. (Emphasis added).

This further specifies the third set of segmented resistors. Claims 13-15 further clarify this concept, and also expands to further segments as disclosed in the application as filed. Again, no new matter has been added.

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Applicants submit that all of the claims as amended are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any additional fees due or credit any overpayment to Deposit Account No. 50-2421.

Sincerely,

Dated: 01/10/2005



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